DOCUMENT RESUME

ED 164 762 CE 017 220

AUTHOR Kotrlik, Joe W.
TITLE Suitability of Available Student Materials for Individual and Group Instructional Purposes in Texas Vocational Agriculture Programs. A Summary Report of Research.
INSTITUTION Texas A and M Univ., College Station. Dept. of Agricultural Education.
PUB DATE May 78
NOTE 34p.

EDRS PRICE MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS Demography; Educational Needs; Geography; *Instructional Materials; Research Needs; Secondary Education; State School District Relationship; Student Teacher Ratio; *Teacher Attitudes; Teaching Methods; Tenure; *Textbook Content; *Textbook Evaluation; *Vocational Agriculture
IDENTIFIERS Texas

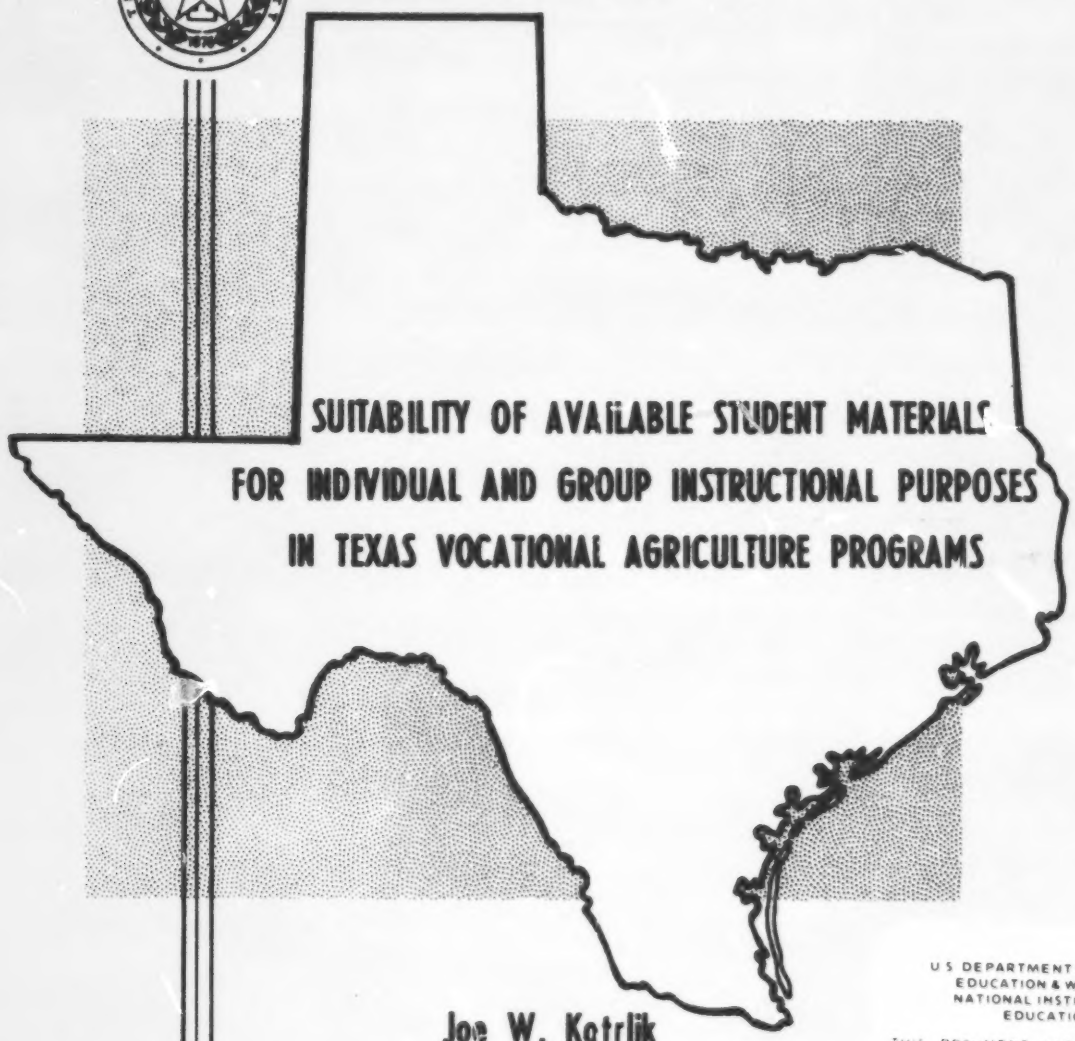
ABSTRACT

Because of the large number of vocational agriculture programs in Texas public schools and the large sum expended annually on their curriculum materials, a study was undertaken to determine the suitability of single topic student materials and of state adopted textbooks for both group and individual instructional purposes. From a random sample of 425 vocational agriculture teachers chosen to be surveyed, 400 returned the opinionnaire. Based on a statistical analysis of their responses, the following were concluded: (1) both single topic student materials and state adopted textbooks should continue to be used in Texas for both individual and group instructional purposes; (2) a majority of teachers favor single topic student materials over state adopted textbooks; (3) teachers prefer hardbound to paperback student materials; and (4) teachers in different geographical areas perceive different needs in student materials. The following topics were recommended for future studies: the relationship between the teachers' viewpoints and factors such as geographical location, department size, tenure level, and average number of students per teacher; an assessment of which state adopted textbooks are not up-to-date and technically accurate; and the replication of this study in other states for the basis of comparison and after five years in Texas to determine if deficiencies in student materials have been corrected. (ELG)

**********
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
**********

ED164762

A Summary Report of Research



# SUITABILITY OF AVAILABLE STUDENT MATERIALS FOR INDIVIDUAL AND GROUP INSTRUCTIONAL PURPOSES IN TEXAS VOCATIONAL AGRICULTURE PROGRAMS

Joe W. Kotrlik
Department of Agricultural Education
Texas A&M University

May 1978

U S DEPARTMENT OF HEALTH EDUCATION & WELFARE NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Joe W. Kotrlik

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

CE 017 220

## FOREWARD

In an era of concern about the rising costs of instruction, increasing interest in individualized approaches to instruction, existence of a greater variety of printed instructional materials, and different areas of instruction in vocational agriculture, questions about the value of both single topic materials, such as bulletins or pamphlets, and state adopted textbooks for either group or individual instruction in vocational agriculture arise. Consequently, Dr. Joe Kotrlik, while serving as Instructor in the Department, undertook the timely research study summarized herein.

The findings, conclusions, implications, and recommendations reported by Dr. Kotrlik will be of interest to curriculum developers, textbook publishers, and Texas Education Agency personnel concerned with providing the best possible instructional materials for the teachers of vocational agriculture in Texas. While the research reported was conducted in Texas, it is reasonable to expect that some of the perceptions and concerns expressed by Texas teachers may in fact be similar to those of teachers in other states. Therefore, concerned and curious persons in other states may wish to replicate this study to determine if teachers in their states hold similar perceptions about the instructional materials available to them.

For additional information on the study, the reader may wish to contact Dr. Joe W. Kotrlik, Assistant Professor, Department of Agricultural Education, 208 Stubbs Hall, Louisiana State University, Baton Rouge, Louisiana, 70803. His telephone number is (504)388-5748.

James E. Christiansen, Professor
Department of Agricultural Education
Texas A&M University
College Station, Texas 77843
May, 1978

## *DEDICATION*

*This summary report is dedicated to the 400 Texas teachers of vocational agriculture who contributed the data needed to answer the questions addressed in this study.*

# SUITABILITY OF AVAILABLE STUDENT MATERIALS FOR INDIVIDUAL AND GROUP INSTRUCTIONAL PURPOSES IN TEXAS VOCATIONAL AGRICULTURE PROGRAMS

## Introduction

Since the implementation of vocational agriculture programs in Texas, vocational agriculture teachers have utilized the textbooks made available to them as a result of both state legislation and Texas Education Agency policy that provides for a state level textbook adoption process and free textbook program. Due to the constantly broadening nature of the vocational agriculture programs, the number of textbook titles approved through the state adoption process has increased periodically. In addition to these textbooks, Vocational Instructional Services, a Texas Education Agency curriculum material development center, began producing curriculum materials for use by teachers in 1965 and also initiated the production of curriculum materials designed specifically for use by students in Texas vocational agriculture programs in 1975.

Currently, the Texas Education Agency supplies free state adopted textbooks to Texas vocational agriculture programs for use by their students. The textbooks supplied are high in quality; however, there appeared to be differing opinions among Texas vocational agriculture teachers as to the suitability of the state adopted textbooks for student materials purposes as evidenced by conversations with and comments of vocational agriculture teachers from around the state. At the same time, disagreement appeared to exist among vocational agriculture teachers, teacher educators, and Texas Education Agency personnel as to the merits of either using more single topic student materials or using single topic student materials solely.

## Purpose and Objectives

The purpose of this study was to evaluate the suitability of single topic student materials and state adopted textbooks for group instructional purposes and to evaluate the suitability of state adopted textbooks for individual instructional purposes. As a means of achieving this purpose, the following specific objectives were formulated:

1. Determine the suitability of state adopted textbooks for group

instructional purposes as rated by vocational agriculture teachers.

2. Determine the suitability of single topic student materials for group instructional purposes as rated by vocational agriculture teachers.

3. Determine the suitability of single topic student materials for general instructional purposes as rated by vocational agriculture teachers.

4. Determine the suitability of state adopted textbooks for individual instructional purposes as rated by vocational agriculture teachers.

5. Determine the suitability of using single topic student materials as the only source of such materials for group instructional purposes as rated by vocational agriculture teachers.

6. Determine if the vocational agriculture teachers' ratings of the suitability of state adopted textbooks for group instructional purposes are associated with selected demographic factors.

7. Determine if the vocational agriculture teachers' ratings of the suitability of single topic student materials for group instructional purposes are associated with selected demographic factors.

8. Determine if the vocational agriculture teachers' ratings of the suitability of single topic student materials for general instructional purposes are associated with selected demographic factors.

9. Determine if the vocational agriculture teachers' ratings of the suitability of state adopted textbooks for individual instructional purposes are associated with selected demographic factors.

10. Determine if the vocational agriculture teachers' ratings of the suitability of using single topic student materials as the only source of such materials for group instructional purposes are associated with selected demographic factors.

The demographic factors used for analysis of variance purposes for objectives six through ten were the vocational agriculture supervisory area, years of vocational agriculture teaching experience, number of teachers within the respondents' departments, type of college degree held, and average number of students per teacher.

## Hypotheses

A review of the literature resulted in the development of a theoretical base for the study which led to the formulation of the following null

hypotheses which were tested statistically in order to achieve objectives six through ten:

1. There is no relationship between the vocational agriculture teachers' ratings of the suitability of state adopted textbooks for group instructional purposes and selected demographic factors.

2. There is no relationship between the vocational agriculture teachers' ratings of the suitability of single topic student materials for group instructional purposes and selected demographic factors.

3. There is no relationship between the vocational agriculture teachers' ratings of the suitability of single topic student materials for general instructional purposes and selected demographic factors.

4. There is no relationship between the vocational agriculture teachers' ratings of the suitability of state adopted textbooks for individual instructional purposes and selected demographic factors.

5. There is no relationship between the vocational agriculture teachers' ratings of the suitability of using single topic student materials as the only source of such materials for group instructional purposes and selected demographic factors.

The demographic factors referenced in these hypotheses are those listed in the discussion of the objectives. It was not necessary to test hypotheses to accomplish objectives one through five.

## Need for the Study

The need for this study was based on the following factors: 1) the large number of vocational agriculture programs in Texas public schools, 2) the large sums of money expended annually on curriculum materials in the form of both textbooks and single topic student materials, 3) the lack of research regarding the suitability of printed curricular and reference materials of different types for use in vocational agriculture programs and specifically the suitability of textbooks and single topic student materials for student use in these programs, and 4) the possibility that differing perceptions exist regarding the suitability of textbooks and single topic materials for student use. Although the literature disclosed that much research had been directed toward vocational agriculture curriculum materials, no comprehensive research concerning the suitability of single

topic materials and textbooks for student use had been conducted in Texas.

## Research Procedure

The sample utilized was selected at random from the Directory of Vocational Agriculture Teachers, 1976-77. This directory listed the names and schools of the 1426 vocational agriculture teachers employed in the 903 regular vocational agriculture programs in Texas during the 1976-77 school year. From this list, the names of those teachers no longer teaching during the 1977-78 school year in the same school as indicated by the 1976-77 directory were deleted from the population. Next, the names of those twenty teachers who participated in the validation of the opinionnaire were deleted from the population. After these deletions, 1205 teachers remained on the list. A modified random sampling technique was utilized to select the 425 teachers to be involved in the study.

A modified closed-form opinionnaire was formulated to obtain information from vocational agriculture teachers. Perception statements designed to accomplish the objectives were developed as a result of reviewing relevant literature and conferring with the following professionals in the fields of Vocational and Agricultural Education: 1) Texas A&M University faculty in Vocational and Agricultural Education; 2) Texas vocational agriculture teachers; 3) Mr. J. A. Marshall, Director, and Mr. G. G. Scroggins, Assistant Director, Agricultural Education, Texas Education Agency; 4) Vocational Instructional Services personnel; and 5) EPDA Fellows at Texas A&M University.

The opinionnaire was field tested during the In-Service Educational Workshop for Vocational Agriculture Teachers held in Dallas, Texas, during the week of August 2-5, 1977. Twenty vocational agriculture teachers selected at random during the workshop completed the opinionnaire and evaluated it as to relevancy, clarity, and format. The information secured from this field test was used in revising the opinionnaire.

The modified closed-form opinionnaire that resulted was divided into five sections. Section I, designed to evaluate those student materials currently available to vocational agriculture departments, consisted of perception statements responded to on a five-point Likert scale. Numerical values were assigned for all possible responses as follows: 1 - Strongly

Disagree; 2 - Disagree; 3 - Undecided; 4 - Agree; and 5 - Strongly Agree. Perceptions were sought regarding the 1) use of state adopted textbooks for group instruction, 2) use of single topic student materials for group instruction, 3) the general usage of single topic materials, and 4) use of state adopted textbooks for individualized instruction.

Section II consisted of two sets of semantic differential scales designed to gain additional insight of the teachers' perceptions concerning state adopted textbooks and single topic student materials. Section III was designed to determine the suitability of using single topic student materials as the only source of such materials for group instructional purposes. The perception statements in Section III were responded to on a five-point Likert scale identical to the one used in Section I.

The purpose of Section IV was to obtain pertinent background information concerning the responding teachers and also to secure summary data that would aid in the analyses of the findings. Section V was to determine which of the twenty state adopted textbook titles were available in the respondents' departments and in what numbers by having respondents check one of the following categories: 1) None, 2) 1-5 copies, 3) 6-15 copies, and 4) 16 or more copies.

All opinionnaires were numerically coded to afford a method of identifying non-respondents, to provide the investigator with a means of conducting follow-up procedures with non-respondents, and to allow a degree of anonymity to each respondent. A cover letter was prepared for the signature of Mr. J. A. Marshall, Agricultural Education Program Director with the Texas Education Agency. The letter solicited responses from the vocational agriculture teachers, explained the purpose of the study and planned disposition of the findings, and gave directions for completing and returning the opinionnaire.

On September 30, 1977, a cover letter from Mr. Marshall, an appropriately coded opinionnaire, and a postage-paid, self-addressed, return envelope were mailed to each of the 425 vocational agriculture teachers identified in the sample. During subsequent follow-up procedures by both mail and phone, it was found that eight of the teachers identified in the sample could not be included because they had moved from the school in which they had taught during the 1976-77 school year or because they had died. This reduced the sample size to 417. By January 13, 1978, 400 completed

opinionnaires had been received, representing 96% of the eligible recipients.

Each item response was transferred directly to IBM cards at the Texas A&M University Data Processing Center. All 400 opinionnaires were used, although a few of the items were not marked or had two or more responses marked. For those items in Sections I, II, III, and IV that were unmarked or had two or more responses marked, no data were recorded for that item. For those items in Section V that were unmarked, a "None" response was recorded. Each card was verified so that errors could be identified and corrected.

The item means taken from the opinionnaires returned after the first mailing and the item means taken from the opinionnaires returned after the follow-up efforts were subjected to a visual comparison. It was decided that the differences between the two groups of data did not differ significantly. Therefore, it was decided that a split-half correlational analysis was not necessary.

Analysis of variance was used to test hypotheses one through five that were established to achieve objectives six through ten. This involved Sections I and III of the opinionnaire. In order to achieve objectives one through five, means for each of the forty-two perception statements in Sections I and III were secured. The mean responses were converted into one of the following nine categories of responses: *strongly agreed, tended to agree strongly, agreed, tended to agree, undecided, tended to disagree, disagreed, tended to disagree strongly,* and *strongly disagreed.*

For each analysis of variance where the F-value derived showed no significant differences existed among the means by demographic variable at the .05 level of significance, no further statistical tests were made. For each analysis of variance performed where the F-value showed that significant differences existed, Duncan's Multiple Range Test was performed to determine where the differences lay. For each analysis of variance performed by supervisory area where the F-value derived showed that significant differences existed among the means, the Scheffé test was performed in addition to the Duncan test to determine where the differences lay. None of the Scheffé tests conducted on these analyses of variance by supervisory area found significant differences to exist between any two means.

For the data secured by Section II, item means and frequencies were

secured so that comparisons could be made between the two sets of semantic differential scales. For the data secured by Section IV, item means and frequencies were secured for use in data analysis. For Section V, item frequencies were secured to aid in data analysis.

All statistical analyses were accomplished utilizing the Amdahl 470/6 computer installation at Texas A&M University. The analyses of variance and Duncan's Multiple Range Tests were performed by utilizing the ANOVA Procedure of the Statistical Analysis System (SAS). The item means and frequencies, by percent and actual count, were secured by using the FREQUENCY Procedure of the Statistical Analysis System (SAS).

## Major Findings

The following are the major findings of this study. Related objectives and hypotheses have been grouped for presentation.

### Summary of Findings Relating to Objectives One and Six, Hypothesis One

Objectives one and six and hypothesis one dealt with the suitability of state adopted textbooks for group instruction. Eleven perception statements were formulated to accomplish the objectives and test the hypothesis. Significant differences among the means by one or more of the five demographic variables were found to exist for the following statements:

1. The respondents *disagreed* with the statement that "State adopted textbooks for group instruction are more up-to-date than single topic student materials," with a mean response of 2.21. Significant differences existed among the means by only one variable, that being tenure level. Duncan's test revealed that teachers with 1-5 years of experience differed significantly from teachers in the other three tenure levels in their responses to this statement, and also that teachers with 11-22 and 6-10 years of experience differed significantly from teachers in the other two tenure levels. It should also be noted that teachers with 11-22 and 6-10 years of experience *disagreed* with the statement while those teachers with 1-5 and 23 or more years of experience *tended to disagree* with the statement.

2. Vocational agriculture teachers *tended to agree* with the statement, "State adopted textbooks for group instruction are available in

sufficient numbers in your department." The mean response was 3.26. Significant differences existed among the means for number of teachers per department. Duncan's test revealed that teachers from one-teacher departments differed significantly from teachers in multiple-teacher departments. Teachers from one-teacher departments were *undecided* in their responses, while teachers from multiple-teacher departments *tended to agree* with the statement.

3. Responding teachers *tended to agree* with this statement: "State adopted textbooks for group instruction coincide well with the curriculum in your vocational agriculture program," with a mean response of 3.56. Ensuing analyses of variance showed that significant differences existed by both supervisory area and number of teachers per department. Figure 1 summarizes the results of the Duncan test on the responses by supervisory area.

Figure 1.--Summary of Differences Among Means by Supervisory Area Taken From Responses of Vocational Agriculture Teachers About the Statement That "State Adopted Textbooks for Group Instructional Purposes Coincide Well With the Curriculum in Your Vocational Agriculture Program."

| Supervisory Area: | VIII | X | II | IV | I | VII | V | III | IX | VI |
|---|---|---|---|---|---|---|---|---|---|---|
| Mean: | 3.29 | 3.38 | 3.42 | 3.47 | 3.47 | 3.59 | 3.62 | 3.65 | 3.72 | 4.00 |
| Groupings of Non-Significant Means: | ⊢ | | | | | | | | ⊣ | |
| | | | | | | ⊢ | | | | ⊣ |

Note. For Figures 1 through 7, the lines under each combination of supervisory areas portray means that did not differ significantly at the .05 level of significance using the Duncan Multiple Range Test.

When Duncan's test was performed on responses by number of teachers per department, it was found that teachers from one-teacher departments differed significantly from teachers in multiple-teacher departments. While teachers in departments with one, two, and three or more teachers *tended to agree* with this statement, the *tendency to agree* was stronger among teachers from multiple-teacher departments.

4. Responding vocational agriculture teachers *tended to agree* with the statement that "State adopted textbooks for group instruction are suitable to the extent that if free state adopted textbooks were not available, you would request that your school district purchase them out of local funds," since the mean response was 3.31. Significant differences existed by number of teachers per department. Teachers in departments with three or more teachers differed significantly from teachers in one- and two-teacher departments; also, teachers in departments with one teacher differed significantly from teachers in multiple-teacher departments in their responses. Teachers in one-teacher departments were *undecided* in their responses while teachers in multiple-teacher departments *tended to agree*.

No significant differences existed among the means by any of the five variables taken from responses to the other seven statements. The seven statements, along with mean responses and the interpretation assigned being given in parentheses at the end of each statement, are as follows:

1. "State adopted textbooks for group instruction are vital to the success of the instructional portion of your vocational agriculture program." (3.77 - Teachers *agreed*.)

2. "State adopted textbooks for group instruction are more technically accurate than single topic student materials." (2.63 - Teachers *tended to disagree*.)

3. "State adopted textbooks for group instruction available in your department are used more than single topic student materials." (3.13 - Teachers were *undecided*.)

4. "State adopted textbooks for group instruction are written at a reading level appropriate for your students." (3.58 - Teachers *tended to agree*.)

5. "State adopted textbooks for group instruction are preferable to single topic student materials because a large amount of information is bound together into one easy-to-store package." (3.37 - Teachers *tended to agree*.)

6. "State adopted textbooks for group instruction are better than single topic student materials for providing group instruction." (3.09 - Teachers were *undecided*.)

7. "State adopted textbooks for group instruction are more appealing visually than are single topic student materials." (3.13 - Teachers were *undecided*.)

Summary of Findings Relating to Objectives
Two and Seven, Hypothesis Two

These objectives and related hypothesis were concerned with the suitability of single topic student materials for group instruction. Eleven perception statements were developed to accomplish the objectives and test the hypothesis. Three statements were found to have significant differences exist among the means for one or more of the demographic variables:

1. The teachers were *undecided* about the statement, "Single topic student materials for group instruction can be purchased in sufficient quantities with funds currently available in your department." The mean response was 3.11. Significant differences existed among the means for only one of the five variables, tenure level. Duncan's test indicated that teachers with 23 or more years of experience differed significantly from teachers in the other three tenure levels in their responses. An interesting note is that teachers with 1-5 years of experience *tended to agree* with the statement while teachers in the other three tenure levels were *undecided*.

2. The respondents were *undecided* in their responses to the following statement: "Single topic student materials for group instruction are easier to acquire thar are state adopted textbooks," the mean response being 3.43. Ensuing analyses of variance showed that significant differences existed among the means by three of the five demographic variables, those being supervisory area, tenure level, and college degree held. Figure 2 summarizes the results of the Duncan test on the responses by supervisory area.

Figure 2 --Summary of Differences Among Means by Supervisory Area Taken From Responses of Vocational Agriculture Teachers to the Statement that "Single Topic Student Materials for Group Instruction are Easier to Acquire than are State Adopted Textbooks."

| Supervisory Area: | II | V | VIII | IV | VI | I | IX | VII | X | III |
|---|---|---|---|---|---|---|---|---|---|---|
| Mean: | 2.88 | 3.20 | 3.25 | 3.31 | 3.41 | 3.52 | 3.59 | 3.61 | 3.69 | 3.72 |
| Groupings of Non-Significant Means: | ⊢——— | | | | ———⊣ | | | | | |
| | | ⊢——— | | | | | | | ———⊣ | |
| | | | ⊢——— | | | | | | | ———⊣ |

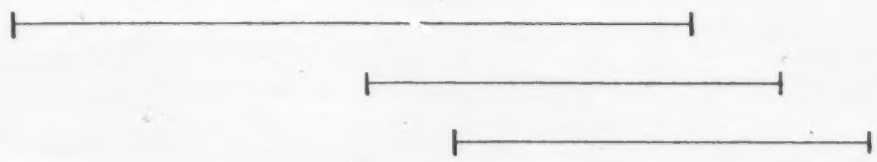
With regard to tenure level, Duncan's test revealed that teachers with 6-10 years of experience differed from teachers in the other three tenure levels and that teachers with 23 or more years of experience differed from teachers in the other three tenure levels. Also, teachers with 23 or more years of experience were *undecided* in their responses while teachers in the other tenure levels *tended to agree* with the statement. Regarding college degree held, teachers with bachelor's degrees exhibited a significantly *stronger tendency to agree* than did those teachers with master's degrees.

3. Teachers were *undecided* in responses to the statement, "Single topic student materials for group instruction are easier to use in teaching than are state adopted textbooks." The mean response was 3.36. Significant differences existed among the means by supervisory area. Duncan's test results on the responses by supervisory area will be found in Figure 3.

Figure 3 --Summary of Differences Among Means by Supervisory Area Taken From Responses of Vocational Agriculture Teachers to the Statement that "Single Topic Student Materials for Group Instruction are Easier to Use in Teaching than are State Adopted Textbooks."

| Supervisory Area: | IV | VI | II | I | IX | V | VIII | VII | X | III |
|---|---|---|---|---|---|---|---|---|---|---|
| Mean: | 3.00 | 3.11 | 3.12 | 3.15 | 3.26 | 3.38 | 3.40 | 3.46 | 3.72 | 3.74 |

Groupings of Non-Significant Means:



Significant differences did not exist among the means by any of the five variables taken from responses to the other eight statements. The mean responses and the interpretation of the means will be found in parentheses following the statements below:

1. "Single topic student materials for group instruction are vital to the success of the instructional portion of your vocational agriculture program." (3.74 - Teachers *tended to agree*.)

2. "Single topic student materials for group instruction coincide well with the curriculum in your vocational agriculture program." (3.95 - Teachers *agreed*.)

3. "Single topic student materials for group instruction are written at a reading level appropriate for your students." (3.81 - Teachers *agreed*.)

4. "Single topic student materials for group instruction are suitable to the extent that if funds were not available to purchase them from state sources, you would request that your school district purchase single topic student materials out of local funds." (3.77 - Teachers *agreed*.)

5. "Single topic student materials for group instruction are preferred over state adopted textbooks because they are less expensive." (3.12 - Teachers were *undecided*.)

6. "Single topic student materials for group instruction are preferred over state adopted textbooks because they are easier to keep up-to-date." (3.74 - Teachers *tended to agree*.)

7. "Single topic student materials for group instruction allow greater flexibility in choosing student materials for a given topic than do state adopted textbooks." (3.79 - Teachers *agreed*.)

8. "Single topic student materials for group instruction are suitable for use when combined with state adopted textbooks as resource materials." (4.16 - Teachers *agreed*.)

## Summary of Findings Relating to Objectives Three and Eight, Hypothesis Three

Hypothesis three and objectives three and eight were concerned with the suitability of single topic student materials for general instructional purposes. Five statements were designed to accomplish objectives three and eight. The following was the only statement for which significant differences existed among the means by a demographic variable, namely, average number of students per teacher: "Single topic materials prepared by industries supplying agricultural goods and services would be more likely to reflect bias than those prepared by curriculum materials centers." Teachers *tended to agree* with the statement with a mean response of 3.71. Duncan's test showed that teachers with an average of 47-54 and 55 or more students

per teacher differed significantly in their responses from teachers in the other three levels of average number of students per teacher; teachers with an average of 39-46 and 55 or more students per teacher differed significantly; and teachers with an average of 39-46 and 30 or less students per teacher differed significantly. Teachers with an average of 39-46 and those with an average of 30 or less students per teacher *tended to agree* with the statement, while teachers in the other three levels of average number of students per teacher *agreed* with the statement.

The other four statements for which no significant differences were found among the mean responses, with the interpretation of the mean responses in parentheses, will be found below:

1. "Single topic materials give you more titles from which to choose on a given topic than do state adopted textbooks." (3.47 - Teachers *tended to agree*.)

2. "Single topic materials are better than state adopted textbooks for providing individualized instruction." (3.20 - Teachers were *undecided*.)

3. "Single topic materials are better than state adopted textbooks for providing group instruction." (3.69 - Teachers *tended to agree*.)

4. "Single topic materials make teaching easier when using student notebooks." (3.68 - Teachers *tended to agree*.)

Summary of Findings Relating to Objectives Four and Nine, Hypothesis Four

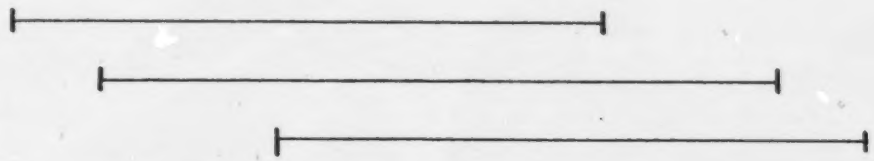
The purpose of objectives four and nine was to evaluate the suitability of state adopted textbooks for individualized instruction using six perception statements. Three statements were found to have significant differences to exist among the means of the responses by one or more variables:

1. "State adopted textbooks for individualized instruction are vital to the success of the instructional portion of your vocational agriculture program." The mean response was 3.64, which indicated that the teachers *tended to agree* with the statement. The analyses of variance revealed significant differences among the means by both supervisory area and college degree held. Duncan's test results on the responses by supervisory area will be found in Figure 4. Regarding college degree held, teachers with a master's degree or above had a stronger *tendency to agree* with the statement than did teachers with bachelor's degrees.

Figure 4. --Summary of Differences Among Means by Supervisory Area From Responses of Vocational Agriculture Teachers to the Statement That "State Adopted Textbooks for Individualized Instruction are Vital to the Success of the Instructional Portion of Your Vocational Agriculture Program."

| Supervisory Area: | X | III | VIII | II | VII | I | IX | V | IV | VI |
|---|---|---|---|---|---|---|---|---|---|---|
| Mean: | 3.28 | 3.49 | 3.51 | 3.56 | 3.59 | 3.70 | 3.76 | 3.80 | 3.81 | 4.00 |

Groupings of Non-Significant Means:

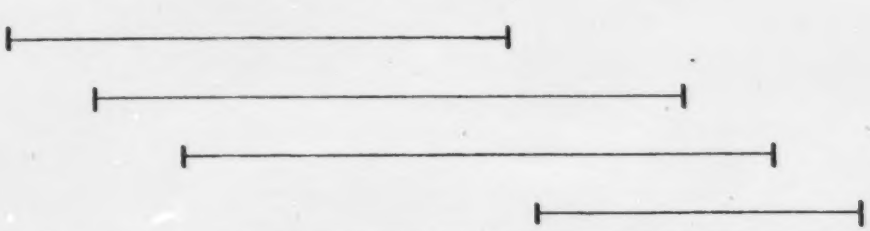


2. The responding vocational agriculture teachers were *undecided*, with a mean of 2.90, in their responses to the statement: "State adopted textbooks for individualized instruction are too expensive for the value received when compared to using single topic student materials." Significant differences among the means by supervisory area were found. Figure 5 summarizes the results of the Duncan test on the responses by supervisory area.

Figure 5 .--Summary of Differences Among Means by Supervisory Area From Responses of Vocational Agriculture Teachers to the Statement That "State Adopted Textbooks for Individualized Instruction are too Expensive for the Value Received When Compared to Using Single Topic Student Materials."

| Supervisory Area: | VI | IX | I | IV | II | V | VIII | III | VII | X |
|---|---|---|---|---|---|---|---|---|---|---|
| Mean: | 2.50 | 2.64 | 2.67 | 2.81 | 2.82 | 2.84 | 3.00 | 3.06 | 3.15 | 3.39 |

Groupings of Non-Significant Means:

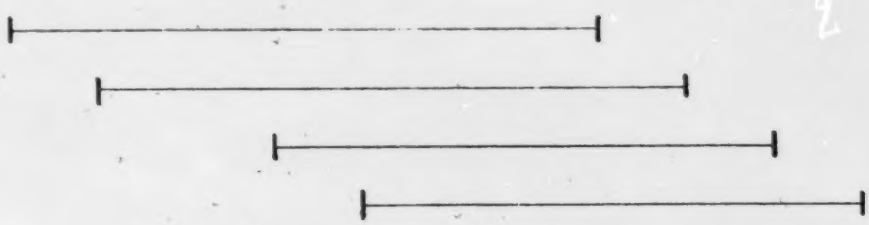


3. The respondents *tended to disagree* with the statement that "State adopted textbooks for individualized instruction are not used often," with a mean response of 2.71. Means by supervisory area differed significantly. Duncan's test results will be found in Figure 6.

Figure 6 .--Summary of Differences Among Means by Supervisory Area Taken From Responses of Vocational Agriculture Teachers to the Statement That "State Adopted Textbooks for Individualized Instruction are not Used Often."

| Supervisory Area: | VI | I | IX | IV | II | V | VIII | VII | III | X |
|---|---|---|---|---|---|---|---|---|---|---|
| Mean: | 2.31 | 2.36 | 2.44 | 2.56 | 2.59 | 2.69 | 2.80 | 2.91 | 3.00 | 3.22 |

Groupings of Non-Significant Means:



No significant differences existed among the means with respect to the following three statements designed to evaluate the suitability of state adopted textbooks for individualized instruction:

1. "State adopted textbooks for individualized instruction are easier to store properly when students use them than is the case when they use single topic student materials." (3.71 - Teachers *tended to agree*.)

2. "State adopted textbooks for individualized instruction are better than single topic student materials since the student can study many different topics by using only one source." (3.44 - Teachers *tended to agree*.)

3. "State adopted textbooks for individualized instruction are more satisfactory than single topic student materials for use by individual students in your instructional program." (2.90 - Teachers were *undecided*.)

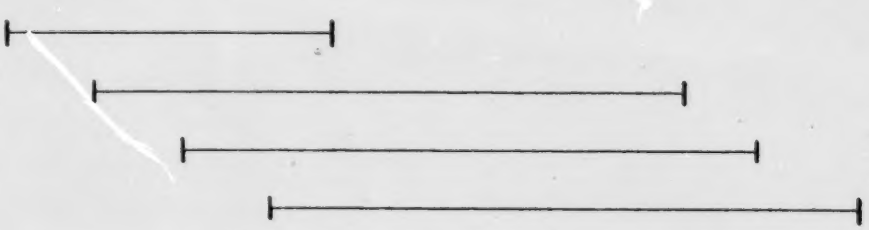
Summary of Findings Related to Objectives Five and Ten, Hypothesis Five

Objectives five and ten dealt with the suitability of single topic materials as the only source of student materials for group instruction. Nine perception statements were formulated to accomplish these objectives. Significant differences existed among the means of the responses by both supervisory area and tenure level for the following statement: "Using single topic materials as the only source of student materials for group instruction would insure that those materials vital to the success of your vocational agriculture program are easily available." The mean response was 3.43, the interpretation of which is that the teachers *tended to agree* with the statement. Duncan's test results on the response by supervisory area will be found in Figure 7.

Figure 7 .--Summary of Differences Among Means by Supervisory Area Taken From Responses of Vocational Agriculture Teachers to the Statement That "Using Single Topic Student Materials as the Only Source of Such Materials for Group Instruction Would Insure That Those Materials Vital to the Success of Your Vocational Agriculture Program are Easily Available."

| Supervisory Area: | IV | I | VI | II | VIII | VII | V | IX | III | X |
|---|---|---|---|---|---|---|---|---|---|---|
| Mean: | 2.97 | 3.06 | 3.24 | 3.32 | 3.48 | 3.50 | 3.50 | 3.51 | 3.70 | 3.78 |

Groupings of Non-Significant Means:



Teachers with 23 or more years of experience differed from teachers in other tenure levels in their responses to the statement above. In addition, teachers with 23 or more years of experience were *undecided*

in their responses while teachers in other tenure levels *tended to agree* with the statement.

Significant differences were not found among the means by the five demographic variables examined for any of the other eight statements below.

1. "Using single topic materials as the only source of student materials for group instruction would insure that those state funds provided for student materials are efficiently used in your vocational agriculture department." (3.66 - Teachers *tended to agree*.)

2. "Using single topic materials as the only source of student materials for group instruction would insure that funds would not be spent purchasing student materials that are not appropriate for use at the high school level." (3.68 - Teachers *tended to agree*.)

3. "Using single topic materials as the only source of student materials for group instruction would insure that those materials selected by you for student use would be used on a regular basis in your vocational agriculture classes." (3.97 - Teachers *agreed*.)

4. "Using single topic materials as the only source of student materials for group instruction would insure that a lack of uniformity would exist among the instructional portions of vocational agriculture programs across the state." (3.39 - Teachers *tended to agree*.)

5. "Using single topic materials as the only source of student materials for group instruction would insure that usually those student materials that are written on a reading level appropriate for your students would be selected." (3.88 - Teachers *agreed*.)

6. "Using single topic materials as the only source of student materials for group instruction would insure that student materials would be secured in the least expensive manner." (3.75 - Teachers *agreed*.)

7. "Using single topic materials as the only source of student materials for group instruction would insure that many of these materials would continually need replacing since students tend to keep them." (3.86 - Teachers *agreed*.)

8. "Using single topic materials as the only source of student materials for group instruction would insure that a high level of flexibility would exist in selecting student materials at the local level." (4.00 - Teachers *agreed*.)

Summary of Additional Findings

In addition to the findings directly related to the hypothesis and objectives of this study, several other findings resulted. Figure 8 on page 19 summarizes the responses to the two sets of semantic differential scales. The responses indicated that vocational agriculture teachers had more positive attitudes toward single topic student materials than they had toward state adopted textbooks. Also, responses indicated that 57.1%, or a significant majority, of the respondents indicated a preference for single topic student materials while 42.9% indicated a preference for state adopted textbooks. Regarding methods of binding student materials, 55.5% preferred hardbound student materials while 44.6% of the respondents preferred paperback student materials. Another finding was that the respondents had a larger number of copies of those titles of state adopted textbooks related to livestock production in their departments than they had of those titles related to soil and crop sciences.

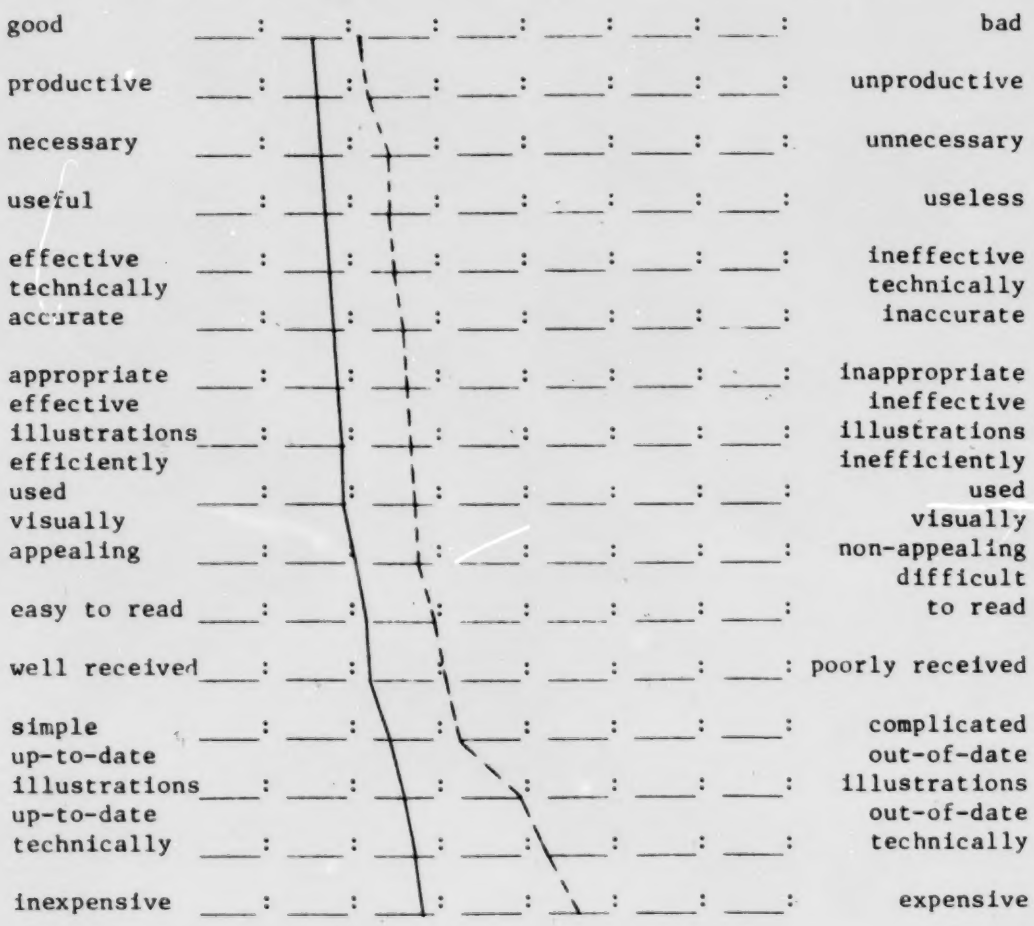
## Conclusions

The following conclusions were formulated from the findings of this study. The conclusions may be generalized to the total population only to the extent that the sample population was representative of the total population.

Objectives One and Six, Hypothesis One

It was concluded that state adopted textbooks were vital to the success of group instruction in Texas vocational agriculture programs. It was also concluded that textbooks were available in sufficient numbers in vocational agriculture departments, that textbooks coincided well with the curricula, that teachers would request that their school districts purchase these textbooks if they were not available through the free state adopted textbook program, that the reading level of the state adopted textbooks was appropriate for vocational agriculture students, and that textbooks were preferable to single topic student materials because a large amount of

Figure 8.---Profile Comparison of Mean Response of 400 Vocational Agriculture Teachers About their Attitude Toward State Adopted Textbooks and Single Topic Materials for High School Student Use




State Adopted Textbooks - - - -

Single Topic Student Materials ———

information was bound together into one easy-to-store package. Conversely, it was concluded that textbooks were not more technically accurate and were not more up-to-date than single topic student materials. No conclusions were drawn regarding whether state adopted textbooks were better than single topic student materials for group instruction, whether state adopted textbooks were more appealing visually than were single topic student materials, and whether state adopted textbooks were used more than single topic student materials.

In addition, it was concluded that null hypothesis one could not be rejected at the .05 level of significance in regard to seven perception statements. The null hypothesis was rejected at the .05 level of significance in regard to four perception statements and the alternative hypothesis that there was a relationship between the vocational agriculture teachers' ratings of the suitability of state adopted textbooks for group instructional purposes and selected demographic factors was accepted. Of the four perception statements for which the analyses of variance were significant by one or more demographic factors, one was significant by supervisory area, three by number of teachers per department, and one by tenure level. College degree held and average number of students per teacher did not have a significant effect on perceptions regarding state adopted textbooks for group instructional purposes.

Objectives Two and Seven, Hypothesis Two

As was the case with state adopted textbooks for group instructional purposes, it was concluded that single topic student materials for group instructional purposes: 1) were vital to the success of the instructional portion of vocational agriculture programs, 2) were written at a reading level appropriate for vocational agriculture students, 3) coincided well with the curricula in vocational agriculture programs, and 4) were suitable to the extent that vocational agriculture teachers would request that their school districts purchase them out of local funds if funds were not

available to purchase them from state sources. It was also concluded that single topic student materials were preferred over state adopted textbooks because they were easier to keep up-to-date, that they allowed greater flexibility in choosing student materials for a given topic than did state adopted textbooks, that they were easier to acquire than were state adopted textbooks, that they were suitable for use when combined with state adopted textbooks as resource materials, and that they were easier to use in teaching than were state adopted textbooks. No conclusions were drawn concerning whether single topic student materials could be purchased in sufficient quantities with funds available and whether single topic student materials were preferred over state adopted textbooks because they were less expensive.

It was also concluded that null hypothesis two could not be rejected at the .05 level of significance for eight of the perception statements. The null hypothesis was rejected for three perception statements and the alternative hypothesis that there was a relationship between vocational agriculture teachers' ratings of the suitability of single topic student materials for group instructional purposes and selected demographic factors was accepted. These factors were supervisory area, tenure level, and college degree held. Number of teachers per department and average number of students per teacher did not have a significant effect on teachers' perceptions regarding single topic student materials for use in group instruction.

Objectives Three and Eight, Hypothesis Three

Based on the findings, it was concluded that single topic materials for general instructional purposes: 1) gave teachers more titles from which to choose on a given topic than did state adopted textbooks, 2) were better than state adopted textbooks for providing group instruction, 3) made teaching easier when using student notebooks, and 4) were more likely to reflect bias when prepared by industries supplying agricultural goods and services than when prepared by curriculum materials centers. No conclusions were drawn regarding whether single topic materials are better than state adopted textbooks for providing individualized instruction.

While it was concluded that null hypothesis three could not be rejected at the .05 level of significance in regard to three perception statements, the null hypothesis was rejected in regard to two perception statements and the alternative hypothesis that there was a relationship between the vocational agriculture teachers' ratings of the suitability of single topic materials for general instructional purposes and selected demographic factors was accepted as it pertained to average number of students per teacher. The other four demographic variables did not have a significant effect on the teachers' perception regarding single topic materials for general instructional purposes.

Objectives Four and Nine, Hypothesis Four

From the findings pertaining to these objectives, four conclusions were drawn. They were that state adopted textbooks for individualized instruction: 1) were easier to store properly when students use them than was the case when they used single topic student materials, 2) were better than single topic student materials since the student could study many different topics by using only one source, 3) were vital to the success of the instructional portion of vocational agriculture programs, and 4) were used often. No conclusions were drawn regarding whether state adopted textbooks for individualized instruction were too expensive for the value received when compared to using single topic student materials and whether they were more satisfactory than single topic materials for use by individual students.

Even though it was concluded that null hypothesis four could not be rejected at the .05 level of significance in regard to three perception statements, the null hypothesis was rejected in regard to three perception statements since a relationship existed between the vocational agriculture teachers' ratings of the suitability of state adopted textbooks for individual instructional purposes and the factors of supervisory area, and college degree held. Conversely, the other three demographic factors did not have a significant effect on the teachers' perceptions.

Objectives Five and Ten, Hypothesis Five

Using single topic student materials as the only source of student materials for group instruction would produce the following results: 1)

those state funds providing for student materials would be efficiently used in vocational agriculture departments, 2) funds would not be spent purchasing student materials that would not be appropriate for use at the high school level, 3) those materials vital to the success of vocational agriculture programs would be easily available, 4) a lack of uniformity would exist among the instructional portions of Texas vocational agriculture programs, 5) usually those student materials that were written on a reading level appropriate for vocational agriculture students would be selected, 6) student materials would be secured in the least expensive manner, 7) many of these materials would continually need replacing since students tend to keep them, 8) those materials selected by vocational agriculture teachers for student use would be used on a regular basis in vocational agriculture classes, and 9) a high level of flexibility would exist in selecting student materials at the local level.

Moreover, it was concluded that null hypothesis five which stated that there is no relationship between the vocational agriculture teachers' ratings of the suitability of using single topic student materials as the only source of student materials for group instructional purposes and selected demographic factors could not be rejected with respect to eight of the nine perception statements. The null hypothesis was rejected with respect to one of the perception statements with the alternative hypothesis that a relationship did exist. The factors for which the null hypothesis was rejected were, in two cases, supervisory area and tenure level. The other three factors did not have a significant effect.

## Additional Conclusions

In addition to the conclusions resulting from the different objectives and hypotheses, it was concluded that teachers perceived that both single topic student materials and state adopted textbooks should continue to be used in Texas vocational agriculture programs for both group and individual instructional purposes. Also, the attitudes of vocational agriculture teachers were more positive toward single topic student materials than they were toward state adopted textbooks and a significant majority of the teachers preferred single topic student materials over state adopted textbooks. In addition, it was concluded that vocational agriculture teachers preferred hardbound student materials over paperback student materials.

## Implications

Predicated on the findings and conclusions of this study and within the guidelines set by standard research procedures, the following implications are offered:

1. Since differences existed among the perceptions of vocational agriculture teachers regarding the suitability of single topic student materials and state adopted textbooks by geographical area (supervisory area) of the state, an implication exists that differing needs pertaining to student materials may exist among these geographical areas. Since the guidelines for the allocation of funds with which single topic student materials may be purchased and the guidelines for the allocation of state adopted textbooks do not specifically reflect the possibility of differing needs existing among these geographical areas, an implication exists that these guidelines as perceived by teachers may be hindering their instructional efforts.

2. Since there was a more positive attitude toward single topic student materials than there was toward state adopted textbooks, and since the respondents indicated that they preferred hardbound student materials, an implication exists that there may be a need for curriculum materials centers to design their single topic student materials in such a way that they could be bound with hard covers.

3. Since the response of vocational agriculture teachers to statements relating to the availability and purchase of student materials differed among the means by number of teachers per department, this implied that those teachers in single teacher departments may need additional financial assistance, or help in determining where they may secure the student materials needed to operate quality instructional programs.

4. Since a significant majority of the respondents indicated a preference for single topic student materials, an implication exists that there may be a need for additional funds to be allocated to local vocational agriculture programs for the purpose of purchasing needed single topic student materials.

5. Since the vocational agriculture teachers were concerned with the technical accuracy and up-to-dateness of state adopted textbooks, it may be implied that students in vocational agriculture programs may not be

receiving factual and reliable information which may result in the lowering of the quality of preparation of program graduates, or that state adopted textbooks sat on the shelves unused.

6. As a result of differing responses by tenure level regarding the suitability of state adopted textbooks and single topic student materials for group instruction, an implication exists that teachers who have graduated from college in the past few years may be more aware of available student materials than were the experienced teachers.

7. The respondents differed in their reactions to statements regarding the use of single topic student materials for general instructional purposes by average number of students per teacher; therefore, an implication exists that the vocational agriculture teachers' perceptions of the suitability of student materials for use in classroom instruction may fluctuate as the number of students for which they have responsibility increases or decreases or as they use different teaching methods for different sized groups.

8. Since differences existed among the perceptions of vocational agriculture teachers regarding the suitability of single topic student materials and state adopted textbooks by geographical area of the state, an implication exists that those student materials known to and used by teachers may not be quite appropriate for the topics currently being taught in Texas vocational agriculture programs. Also, an implication exists that current efforts to acquaint teachers with available student materials may need to be increased.

9. Since there was a lack of a strong preference as to whether single topic student materials or state adopted textbooks were "better", an implication exists that these materials may not be used to an appreciable degree, that they may not be used at all, or that teachers may not be well acquainted with one or both types of student materials.

## Recommendations

Based upon the findings, conclusions, and implications of this study, and also upon the impressions and insights gained by the researcher while conducting this study, the following recommendations appear to be appropriate:

1. This summary report of research should be made available to agricultural textbook publishers, vocational agriculture curriculum material centers, and other student material producing organizations so that the perceptions held by the vocational agriculture teachers may be disseminated and appropriate actions may be initiated to improve the quality of student materials used in vocational agriculture programs.

2. This summary report of research should be made available to Texas Education Agency personnel so that the information may be used in making future decisions affecting textbooks and other student materials.

3. The Texas Education Agency should initiate an effort to update student materials more often and also to improve the technical accuracy of student materials where they have influence.

4. This summary report of research should be made available to teacher trainers in agriculture so that the findings and conclusions may be used in the preparation of students wishing to become vocational agriculture teachers.

5. Further research should be conducted to determine why the relationship exists between geographical location (supervisory area) and the teachers' ratings of the suitability of the various student materials.

6. A study should be conducted to determine which state adopted textbooks are not up-to-date and technically accurate as perceived by vocational agriculture teachers so that this information may be utilized in future decisions regarding state adopted textbooks for vocational agriculture programs.

7. Research should be conducted to determine why the relationship exists between the number of teachers per department and the teachers' perceptions of the suitability of state adopted textbooks for group instructional purposes so that this information may be used in future decisions regarding the allocation of state adopted textbooks to the various sizes of departments.

8. Additional research should be conducted to determine why the relationship exists between tenure level of vocational agriculture teachers and their perceptions of the suitability of the various student materials for group instructional purposes so that this information may be utilized in the future in planning, producing, and disseminating these materials or in the preparation of teachers.

9. Further research should be conducted to determine why the relationship exists between the average number of students per teacher and the suitability of single topic student materials for general instructional purposes so that this information may be utilized in the future in planning, producing, and disseminating these materials.

10. This study should be replicated in other states with state adoption programs to see if the perceptions of vocational agriculture teachers regarding the various student materials reported herein are peculiar to Texas or are the universal impressions of teachers regarding single topic student materials and state adopted textbooks.

11. This study should be replicated in Texas in five years to see if the deficiencies cited in student materials have been corrected.

## REFERENCES


1. Abel, Marilyn. "Paperback Practicalities," School Library Journal 22(1976): 31-33.
2. Allen, Dwight W. "The Decline of the Textbook." Change 3(1971): 37-39.
3. Barr, Anthony J.; Goodnight, James H.; Sall, John P.; Helwig, Jane T. A User's Guide to SAS 76. Raleigh, North Carolina: SAS Institute, Inc., 1976.
4. Barr, A. S.; Burton, William H. The Supervision of Instruction. New York: D. Appleton and Company, 1926.
5. Barrilleaux, Louis E. "An Experimental Investigation of the Effects of Multiple Library Sources as Compared to the Use of a Basic Textbook on Student Achievement and Learning Activity In Junior High School Science." Doctoral dissertation, The University of Iowa, 1965.
6. Blum, Eleanor. "Paperback Book Publishing: A Survey of Content." Journalism Quarterly 36(1959): 447-454.
7. Bristol, Ben. "Selecting Books." The Agricultural Education Magazine 23(1951): 255.
8. Broudy, Eric. "The Trouble With Textbooks." Teachers College Record 77(1975): 13-34.
9. Chall, Jeane. "The Measurement of Readability." The Education Digest 21(1955): 44-46.
10. Clement, Stanley L. "Why Paperback Textbooks Are Worth Considering." Nation's Schools 70(1962): 68.
11. Crane, Barbara. "The 'California Effect' on Textbook Adoptions." Educational Leadership 32(1975): 283-285.
12. Cromwell, Raymond. "Textbooks: Evaluation and Use." American Vocational Journal 41(1966): 24-25.
13. Cronbach, Lee J. Text Materials in Modern Education. Urbana: University of Illinois Press, 1955.
14. Damron, John Douglas. "An Experimental Study of Economy and Practicality in the Use of Selected Paperbound Textbooks in the Public Schools of Texas." Doctoral dissertation, The University of Texas, 1963.
15. Davis, O. L., Jr. "Textbooks and Other Printed Materials." Review of Educational Research 32(1962): 127-140.
16. Doll, Ronald C. Curriculum Improvement: Decision Making and Progress (2nd ed.). Boston: Allyn and Bacon, Inc., 1970.
17. Drachler, Norman. "Shortcomings of American Textbooks." NASSP Bulletin 54(1970): 15-25.
18. Flayderman, Phillip C. "A Frank Query: Paperbacks vs. Hardcovers." Clearing House 39(1965): 410.
19. Galloway, Robert Edward. "A Comparison of the Reading Difficulty of Vocational Agriculture Reference Books With the Reading Ability of the Students Using Them." Doctoral dissertation, Purdue University, 1960.

20. Gerletti, R. C. "The Importance of an Evaluation Policy for Instructional Materials." Audiovisual Instruction 7(1962): 289-291.

21. Grover, Edwin Osgood. "Why Textbooks Are Dull." Texas Outlook 15(1931): 9-10.

22. Guilford, J. P.; Fruchter, Benjamin. Fundamental Statistics in Psychology and Education. New York: McGraw Hill Book Company, 1973.

23. Guinn, Russ (President, Interstate Printers and Publishers, Inc., Danville, Illinois). Telephone Conversation, June 31, 1977.

24. Hays, Martha. "A Teacher's Case for Consumable Paperbacks as Textbooks." Texas Outlook 58(1974): 38-39.

25. Hensel, James W.; Johnson, Cecil H., Jr. "An Evaluation of the Off-farm Agricultural Occupations Materials." Columbus, Ohio: The Center For Research and Development in Vocational and Technical Education, The Ohio State University, 1967.

26. Holland, Robert. "Today's Textbooks: Basic Tool or Museum Piece?" Virginia Journal of Education 62(1962): 20-22, 37.

27. Isaac, Stephen; Michael, William B. Handbook in Research and Evaluation. San Diego: Robert R. Knapp, 1971.

28. Jacks, Lloyd Palmer. "Development and Use of Subject Matter Materials for Vocational Education in Agriculture." Doctoral dissertation, Louisiana State University and Agricultural College, 1967.

29. Jacks, Lloyd Palmer. "Development and Use of Subject Matter Materials for Vocational Education in Agriculture." The Journal of the American Association of Teacher Educators in Agriculture 9(1968): 9-14.

30. Kirk, Russell. "The Textbook Trash Pile." Nebraska Education News 20(1966): 6.

31. Knowlton, P. A. "What is Wrong With Textbooks?" The Education Digest 16(1951): 1-3.

32. Leeper, Robert R. (ed.). Strategies for Curriculum Change. Washington, D.C.: Association for Supervision and Curriculum Development, 1965.

33. Linstone, Harold A.; Turoff, Murray. The Delphi Method: Techniques and Applications. Reading, Mass.: Addison-Wesley, 1975.

34. Litzinger, William D. "Paperback Usage in Schools." Clearing House 38(1964): 474-477.

35. MacLean, Charles Blair. "Selected United States Government Publications as Resource Materials for Industrial Arts; Their Selection, Value, Availability and Organization for Effective Use." Doctoral dissertation, University of Maryland, 1963.

36. McNamara, Robert C. "Advantages and Disadvantages of State Uniformity of Textbooks." The American School Board Journal 90(1935): 31.

37. National Education Association. Instructional Material: Selection and Purchase. New York: Association of American Publishers, 1976.

38. National Education Association. The Principals Look at the Schools. Washington, D. C.: National Education Association, 1962.

39. Neagley, Ross L.; Evans, N. Dean. Handbook for Effective Curriculum Development. Englewood Cliffs, New Jersey, Prentice-Hall, Inc., 1967.

40. Osgood, Charles E.; Suci, George J.; Tannenbaum, Percy H. The Measurement of Meaning. Chicago: University of Illinois Press, 1957.

41. Oxley, Vincent Edward. "Trade and Technical Instructional Materials: Their Status, Preparation, and Use." Doctoral dissertation, University of Missouri, Columbia, 1969.

42. Page, Foy (Coordinator, Vocational Instructional Services, Texas A&M University, College Station, Texas). Personal interview, August 11, 1977.

43. "Paperbacks Preferred." Maine Teacher 30(1969): 6.

44. Phipps, Lloyd J. Handbook on Agricultural Education in Public Schools. Danville, Illinois: The Interstate Printers and Publishers, Inc., 1972.

45. Polos, Nicholas C. "Textbooks--What's Wrong With Them?" The Clearing House 38(1964): 451-456.

46. Pucel, David J.; Knaak, William C. Individualizing Vocational and Technical Education. Columbus, Ohio: Charles E. Merrill Publishing Company, 1975.

47. Ridenour, Harlan E.; Woodin, Ralph J. Guidelines for a State Vocational Agriculture Curriculum Materials Service. Columbus: The Department of Agricultural Education, The Ohio State University, 1966.

48. Risk, Thomas M. Principles and Practices of Teaching in Secondary Schools (3rd ed.). New York: American Book Company, 1958.

49. Ross, Frank. "The Paperback Revolution." Media and Methods 10(1973): 11-13, 38, 41-43.

50. Shoemaker, Charles Edward. "Instructional Materials in Industrial Arts: An Appraisal of Instructional Materials Prepared By Industry For Home-Use Equipment For Use in Industrial Arts." Doctoral dissertation, University of Maryland, 1961.

51. Shotwell, Thomas K. "The First Agricultural Textbook." Agricultural Education Magazine 36(1963): 68.

52. Snider, Glenn R. "Textbooks . . . Something More?" The Oklahoma Teacher 49(1967): 20-22.

53. Steele, Robert G. D.; Torrie, James H. Principles and Procedures of Statistics. New York: McGraw Hill Book Company, Inc., 1960.

54. Stevens, Traxel. "Textbooks Today--Schools Tomorrow." Texas Outlook 46(1962): 16-17.

55. Texas Department of Education. Course of Study for the Public Schools, Bulletin #25. Austin: Texas Department of Education, 1913.

56. Texas Department of Education. Eleventh Biennial Report of the State Superintendent of Public Instruction. Austin: Ben C. Jones and Company, 1898.

57. Texas Department of Education. Tenth Biennial Report of the State Superintendent of Public Instruction. Austin: Ben C. Jones and Company, 1896.

58. Texas Education Agency. Directory of Vocational Agriculture Teachers, 1976-77. Austin: Texas Education Agency, 1976.

59. Texas Education Agency. Directory of Vocational Agriculture Teachers, 1977-78. Austin: Texas Education Agency, 1977.

60. Texas Education Agency. List of Current Adoption Textbooks, 1976-77. Austin: Texas Education Agency, 1976.

61. Texas Education Agency. Texas State Plan for Vocational Education. Austin: Texas Education Agency. 1976.

62. "The Great Instructional Materials Mix-up." Teacher 90(1972): 45-49.

63. Tillman, Charles J. D. "Extent and Use of Agricultural Education Materials by Vocational Agriculture Teachers in Virginia." Doctoral dissertation, Virginia Polytechnic Institute and State University, 1976.

64. Towne, D. C.; Stoller, Alan D.; Milczarek, Sharon; Huber, Jake. "It's Time for More Comparison Shopping." American Vocational Journal 47(1972): 51-53.

65. Wall, James Eugene. "The Utilization of State Agricultural College Publications in Vocational Agriculture Departments." The Agricultural Education Magazine 35(1963): 207-209, 219.

66. Zamchick, David (ed.) "Problems in Paperback Publishing." English Journal 47(1958): 562-565.